IFW/DAC

OIPE
OCT 14 2004
PATENT & TRADEMARK OFFICE

Application No.: 10/680,254

Docket No.: IID-0211

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Tetsuya Hattori, et al.

Confirmation No.: 5666

Application No.: 10/680,254

Art Unit: 1714

Filed: November 19, 2003

Examiner: Not Yet Assigned

For: BALLPOINT-PEN INK COMPOSITIONS

PETITION UNDER 37 C.F.R. §1.181 TO ACCORD FILING DATE OF OCTOBER 8, 2003

BOX DAC
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicant hereby petitions for the present application to be accorded the filing date of October 8, 2003.

In support of this Petition, Applicants, through their Attorneys, hereby submit (1) a copy of the papers as filed; and (2) a copy of the postcard bearing the stamp of the Patent and Trademark Office mail room acknowledging the filing of the application. A review of these papers clearly show that the present application was complete as of the filing date of October 8, 2003.

The postcard shows that the application papers were deposited with the Patent and Trademark Office (USPTO) on October 8, 2003. The deposited application papers include a specification (pages 1-33) containing a description of twenty-nine pages, claims 1 through 7 provided on three pages (pages 30-32), a one-page abstract (page 33), and **no drawings**. A copy of the thirty-three page specification, including three pages of claims and one page abstract are provided along with this petition.

The application papers deposited with the USPTO on October 8, 2003 were accompanied by two postcard receipts. The first of the two postcard receipts was presented on October 8, 2003, along with the application papers and stamped with the Office Date stamp of October 8, 2003. A copy of the postcard receipt bearing the Office Date stamp of October 8, 2003 is provided along with this petition.

On October 22, 2003, two weeks after the October 8, 2003 date of deposit, the USPTO mailed the second of the two postcard receipts. Like the first postcard receipt bearing the Office Date stamp of October 8, 2003, the mailed postcard receipt also confirms that the USPTO did receive the specification, claims and abstract (thirty-three total). The second postcard receipt also bears a bar code having a serial number of 10/680,254. A copy of the second postcard receipt mailed on October 22, 2003 is provided along with this petition.

A second preliminary amendment was filed on November 19, 2003 adding drawings (Figures 1-6) and a Brief Description of the Drawings section. The drawings added **are not necessary for the understanding of the invention** since the present application is directed to ink **compositions** and not to the shape and structure of ballpoint pens which are embodied in the drawings. A copy of the second preliminary amendment is provided along with this petition.

The USPTO mailed a Filing Receipt on January 8, 2004. The Filing Receipt indicates that the above-identified application has been accorded a filing date of November 19, 2003, due to the subsequent filing of the second preliminary amendment and drawings. A copy of the Filing Receipt is provided along with this petition.

Applicants filed a Request for a Corrected Filing Receipt dated August 18, 2004 since Applicants believe the Filing Receipt to be in error. The USPTO issued a response dated September 15, 2004 indicating that the filing date accorded to the application is the date the application met the filing date requirement. Copies of the Request for a Corrected Filing Receipt dated August 18, 2004 and the Patent Office Response dated September 15, 2004 are provided herewith.

Applicants strongly disagree with the application filing date on the Filing Receipt and the USPTO response to Applicant's correction request since, as noted earlier, the drawings added by the preliminary amendment dated November 19, 2003 **are not necessary for the understanding of the invention**. As stated earlier, the present application is directed to ink compositions and not to the shape and structure of ballpoint pens which are embodied in the drawings. Under 35 U.S.C. §113, Applicant is only required to furnish a drawing when it is "*necessary for the understanding of the subject matter sought to be patented*" (see also 37 C.F.R. §1.81). Since, in this case, the later-filed drawings are not necessary for the understanding of the invention, the present application was complete on October 8, 2003 (due to the filing of a specification containing a description and at least one claim - See 37 C.F.R.

§1.53(b)), and should be properly accorded the filing date of October 8, 2003.

This is a petitionable issue because Applicant seeks review of the refusal to accord the above-identified application the filing date of October 8, 2003.

Upon this petition and in view of the evidence submitted, it is requested that the above-identified application be accorded with a filing date of October 8, 2003.

No fee is believed required to support this petition. See 37 C.F.R. §1.181.

However, if a fee is required, the Commissioner is hereby authorized to charge the petition fee to Deposit Account No. 18-0013.

Please charge Deposit Account No. 18-0013 for any additional costs that may be incurred.

Dated: October 14, 2004

Respectfully submitted,

By____________________
David T. Nikaido
Registration No.: 29,211

Lee Cheng
Registration No.: 40,949

RADER, FISHMAN & GRAUER PLLC
1233 20th Street, N.W., Suite 501
Washington, DC 20036
(202) 955-3750
Attorney for Applicant

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/680,254	11/19/2003	Tetsuya Hattori	IID-0211

CONFIRMATION NO. 5666

OC000000013807330

23353
RADER FISHMAN & GRAUER PLLC
LION BUILDING
1233 20TH STREET N.W., SUITE 501
WASHINGTON, DC 20036

OCT 1 4 2004
PATENT & TRADEMARK OFFICE

Date Mailed: 09/15/2004

RESPONSE TO REQUEST FOR CORRECTED FILING RECEIPT

Application Filing Date

In response to your request for a corrected Filing Receipt, the Office cannot comply with your request because:

- ☐ If your application was submitted under 37 CFR 1.10, your filing date should be the "date in" found on the Express Mail label. If there is a discrepancy, a petition to accord a filing date should be submitted along with a copy of the Express Mail label showing the "date in" and be directed to the Office of Petitions.
- ☐ A copy of the Express Mail label was not enclosed with your request. Petitions under 37 CFR 1.10 require a copy of the Express Mail Label to be submitted.
- ☐ The "date in" on the Express Mail label is the date given on the Filing Receipt.
- ☒ The filing date accorded to the application is the date the application met the filing date requirements of 37 CFR 1.53(b) or (c).
- ☐ Applications submitted with a certificate of mailing under 37 CFR 1.8 are accorded a filing date as of the date the application is received in the U.S. Patent and Trademark Office. A request to review the filing date accorded to the application must be in the form of a petition.
- ☐ The filing date on your return postcard is the same as the date on your Filing Receipt. A request to review the filing date accorded to the application must be in the form of a petition.

A petition under 37 CFR 1.10, 37 CFR 1.53 or 37 CFR 1.182 is needed to request a change to the filing date. A $130 petition fee is required for a petition under 1.53 or 1.182. If you choose to file a petition, the petition and the $130 petition fee, if any, to:

Box DAC

Commissioner for Patents
Washington, DC 20231

Customer Service Center
Initial Patent Examination Division (703) 308-1202

PART 1 - ATTORNEY/APPLICANT COPY

OIPE
OCT 1 4 2004
PATENT & TRADEMARK OFFICE

☑ Trademark ☐ Docket No. IID-0211
No. 10/680 254 Filed 08 OCT 2003
Applicant(s) Hattori et al.
Filed herewith on 18th August, 2004
Account $ ______ §8 ______ §15
Declaration of Use
TM Renewal
Assignment/PTO-1595
Preliminary Amendment
New Application
Page(s) of Specification
(Claims 1 through ______)
Certified Copy
Other: REQ for CofR
Maintenance Fee
IDS/PTO-1449
Response
Declaration
Sheet of Drawings (2 sets)
(Fig. 1 through ______)
APOA/Change of Address
Due: ASAP
Initial: D.N/LC/cdr
VIA COURIER
LC

Patent ☑ Trademark ☐ Docket No. IID-0211
Serial No. 10/680 254 Filed 08 OCT 2003
Applicant(s) Hattori et al.
Papers filed herewith on 18th August, 2004
Deposit Account $ ______ §8 ______ §15

OIPE
AUG 1 8 2004
JC25
PATENT & TRADEMARK OFFICE

______ Declaration of Use
______ TM Renewal
______ Assignment/PTO-1595
______ Preliminary Amendment
______ New Application
/ Page(s) of Specification
______ (Claims 1 through ______)
______ Certified Copy
X Other: REQ for CofR

______ Maintenance Fee
______ IDS/PTO-1449
______ Response
______ Declaration
______ Sheet of Drawings (2 sets)
(Fig. 1 through ______)
______ APOA/Change of Address

Due: ASAP
Initial: D.N/LC/cdr
VIA COURIER
LC

Docket No.: IID-0211 *PATENT APPLICATION*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

OIPE
OCT 1 4 2004
PATENT & TRADEMARK OFFICE

In the application of: Hattori et al.

Application No.: 10/680,254

Filing Date: October 8, 2003

For: BALLPOINT-PEN INK COMPOSITIONS

Group Art Unit: 1714

REQUEST FOR CORRECTED FILING RECEIPT

Attention: Office of Initial Patent Examination's
Customer Service Center

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

Sir:

1. Attached is a copy of the official filing receipt received from the PTO in the above application for which issuance of a corrected filing receipt is respectfully requested.

2. There is an error with respect to the following, which is incorrectly entered. We have enclosed a copy of the date-stamped and return postcard as proof of the correct filing date.

Error in:	*Correct data:*
1. Filing date	1. OCTOBER 8, 2003

3. The correction is due to an error by the USPTO. If any fee is due, please charge Deposit Account No. 18-0013.

Dated: August 18, 2004

Tel. No.: (202) 955-3750

Lee Cheng
Reg. No. 40,949
Rader, Fishman & Grauer, PLLC
1233 20th Street, N.W., Suite 501
Washington, DC 20036
Customer No.: 23353

Atty Docket No.: IID-0211

Inventor: Tetsuya Hattori, et al.

Application No.: NEW APPLICATION
Title: BALLPOINT-PEN INK COMPOSITIONS

Filing Date: October 8, 2003

17858 U.S. PTO
10/680254
100803

OIPE
OCT 14 2004
PATENT & TRADEMARK OFFICE

Documents Filed:
- Utility Patent Application Transmittal (1 page)
- Fee Transmittal (1 page)
- Specification (33 pages)
- Oath or declaration (5 pages)
- Associate Power of Attorney (1 page)
- Recordation Form Cover Sheet (1 page)
- Assignment (1 page)

IDS w/PTO-1449 + 1 ref

Charge $810.00 to deposit account 18-0013

Preliminary Amendment (3 pages)

OIPE JC34
OCT 08 2003
PATENT & TRADEMARK OFFICE

LC.

Via: PTO Daily Run
Sender's Initials: DTN/LC/nb

Date: October 8, 2003

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPL NO.	FILING OR 371 (c) DATE	ART UNIT	FIL FEE REC'D	ATTY.DOCKET NO	DRAWINGS	TOT CLMS	IND CLMS
10/680,254	~~11/19/2003~~ OCT. 08 2003	1714	770	IID-0211	6	7	1

CONFIRMATION NO. 5666

FILING RECEIPT

OC000000011650750

23353
RADER FISHMAN & GRAUER PLLC
LION BUILDING
1233 20TH STREET N.W., SUITE 501
WASHINGTON, DC 20036

OIPE
OCT 14 2004
PATENT & TRADEMARK OFFICE

Date Mailed: 01/08/2004

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Filing Receipt Corrections, facsimile number 703-746-9195. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).**

Applicant(s)

Tetsuya Hattori, Nagoya-shi, JAPAN;
Katsuhisa Asada, Nagoya-shi, JAPAN;

Domestic Priority data as claimed by applicant

Foreign Applications

If Required, Foreign Filing License Granted: 01/08/2004

Projected Publication Date: 05/19/2005

Non-Publication Request: No

Early Publication Request: No

Title

Ballpoint-pen ink compositions

Preliminary Class

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Office of Export Administration, Department of Commerce (15 CFR 370.10 (j)); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

OIPE JC68
OCT 14 2004
PATENT & TRADEMARK OFFICE

RADER, FISHMAN & GRAUER PLLC
LION BUILDING, SUITE 501
1233 20TH STREET, N.W.
WASHINGTON, D.C. 22036

INVENTOR(S): Hattori et al.
FILING DATE: OCTOBER 8, 2003
APPLN NO.: 10/680,254
DOCKET NO.: IID-0211

Atty Docket No.: IID-0211

Inventor: Tetsuya Hattori, et al.

Application No.: 10/680,254

Filing Date: October 8, 2003

Title: BALLPOINT-PEN INK COMPOSITIONS

Documents Filed:
2nd Preliminary Amendment (4 pages) w/Figs. 1-6

L.C.

LDD

Via: PTO Daily Run
Sender's Initials: DTN/LC/nb

Date: November 19, 2003

Atty Docket No.: IID-0211

Inventor: Tetsuya Hattori, et al.

Application No.: 10/680,254

Filing Date: October 8, 2003

Title: BALLPOINT-PEN INK COMPOSITIONS

Documents Filed:
2nd Preliminary Amendment ([illegible] pages) w/Figs. 1-6

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NOV 19 2003
JC34
PATENT & TRADEMARK OFFICE

L.C.

LDD

Via: PTO Daily Run
Sender's Initials: DTN/LC/nb

Date: November 19, 2003

OCT 1 4 2004
PATENT & TRADEMARK OFFICE

Docket No.: IID-0211

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Tetsuya Hattori, et al.

Confirmation No.: N/A

Application No.: 10/680,254

Art Unit: N/A

Filed: October 8, 2003

Examiner: Not Yet Assigned

For: BALLPOINT-PEN INK COMPOSITIONS

SECOND PRELIMINARY AMENDMENT

MS Non-Fee Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

INTRODUCTORY COMMENTS

Prior to examination on the merits, please amend the above-identified U.S. patent application as follows:

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Drawings begin on page 3 of this paper and include attached new sheets of drawings (Figures 1-6)

Remarks/Arguments begin on page 4 of this paper.

An **Appendix** including added drawings (figures 1-6) is attached following page 4 of this paper.

AMENDMENTS TO THE SPECIFICATION

Please add the following paragraphs containing the "Brief Description Of The Drawings" after line 1 "preventing body simultaneously" on page 20.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a referenced schematic view of one example of the ballpoint pen.

Figure 2 is a referenced longitudinal sectional schematic view of the ballpoint-pen tip part of the ballpoint pen in Figure 1.

Figure 3 is a referenced sectional view of Figure 2 at III-III.

Figure 4 is another referenced longitudinal sectional schematic view of the ballpoint-pen tip part of the ballpoint pen according to the present invention.

Figure 5 is a referenced sectional view of Figure 4 at V-V.

Figure 6 is another referenced longitudinal sectional schematic view of the ballpoint-pen tip part of the ballpoint pen.

AMENDMENTS TO THE DRAWINGS

The new sheets of drawings (Figures 1-6) are attached. Please enter them into the specification.

Attachment: New Figures 1-6

REMARKS

The above amendments to the specification have been made to reinsert the "Brief Description of the Drawings" previously deleted which corresponds to the new drawing (Figures 1-6) attached herewith. Applicants believe that the above amendments and attached new Figures put the application in better condition for examination. No new matter has been added.

In the event that any fees are due in connection with this paper, please charge our Deposit Account No. 18-0013.

Dated: November 19, 2003

Respectfully submitted,

By____________________
David T. Nikaido
Registration No.: 29,211

Lee Cheng
Registration No.: 40,949

RADER, FISHMAN & GRAUER PLLC
1233 20th Street, N.W., Suite 501
Washington, DC 20036
(202) 955-3750
Attorney for Applicant

Attachments: Figs. 1-6 (6 sheets)

NEW SHEETS

FIG. 1

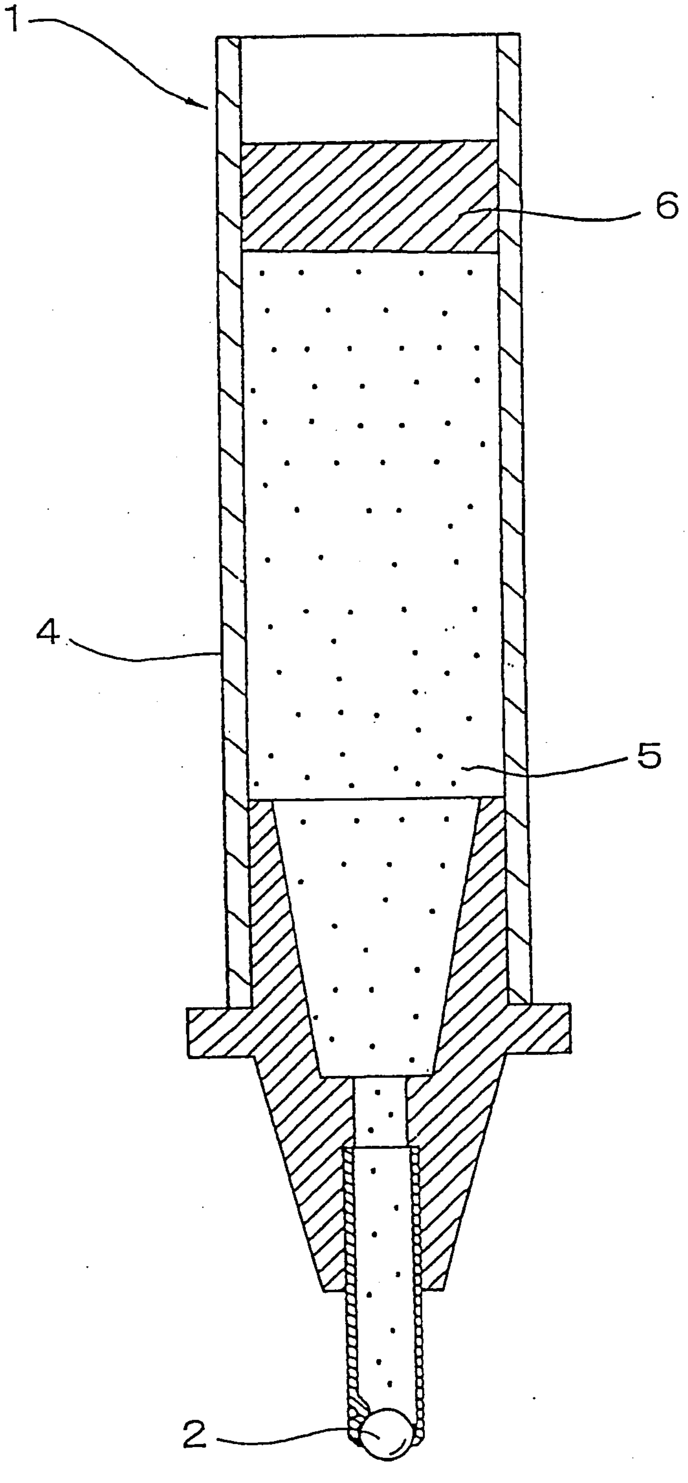


FIG. 2

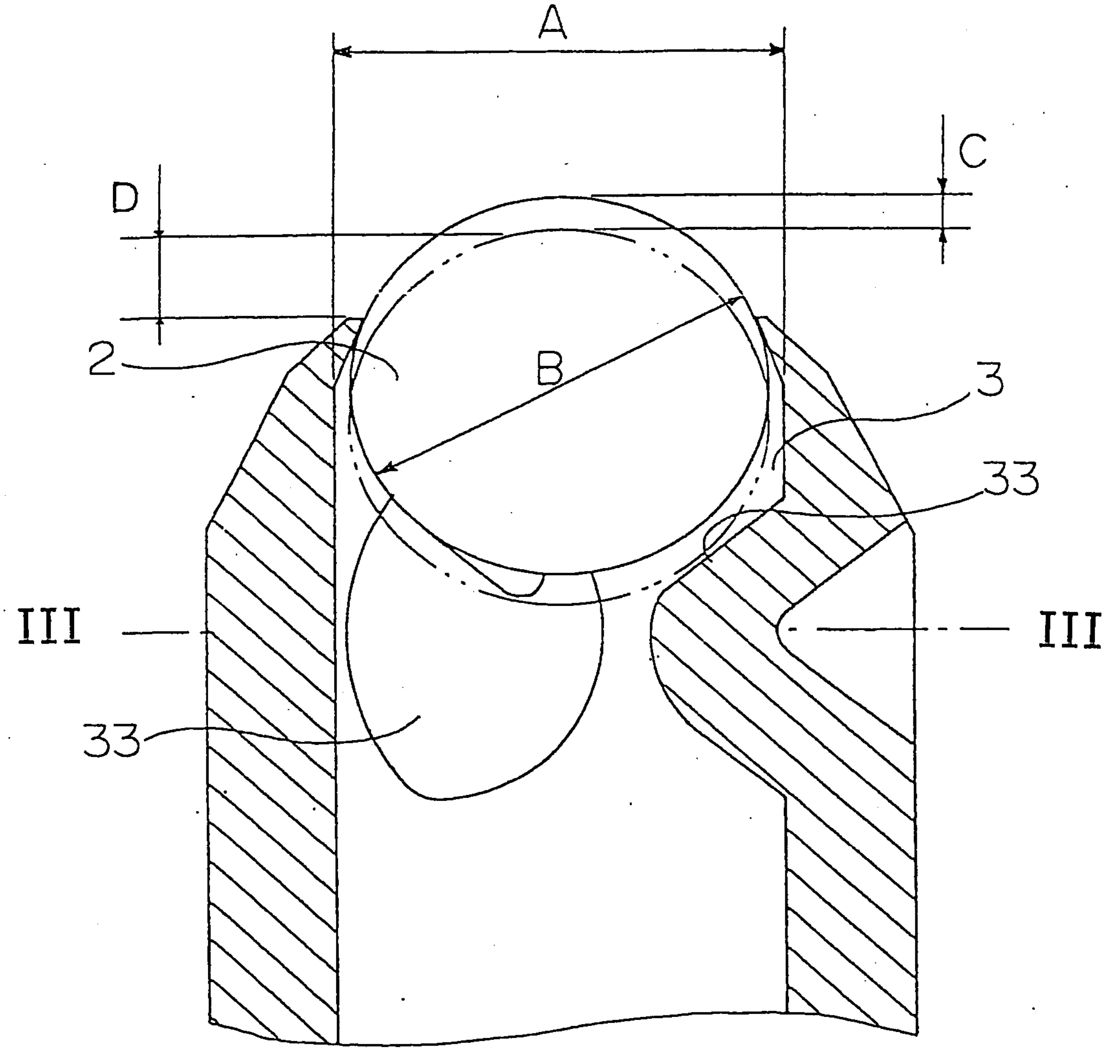


FIG. 3

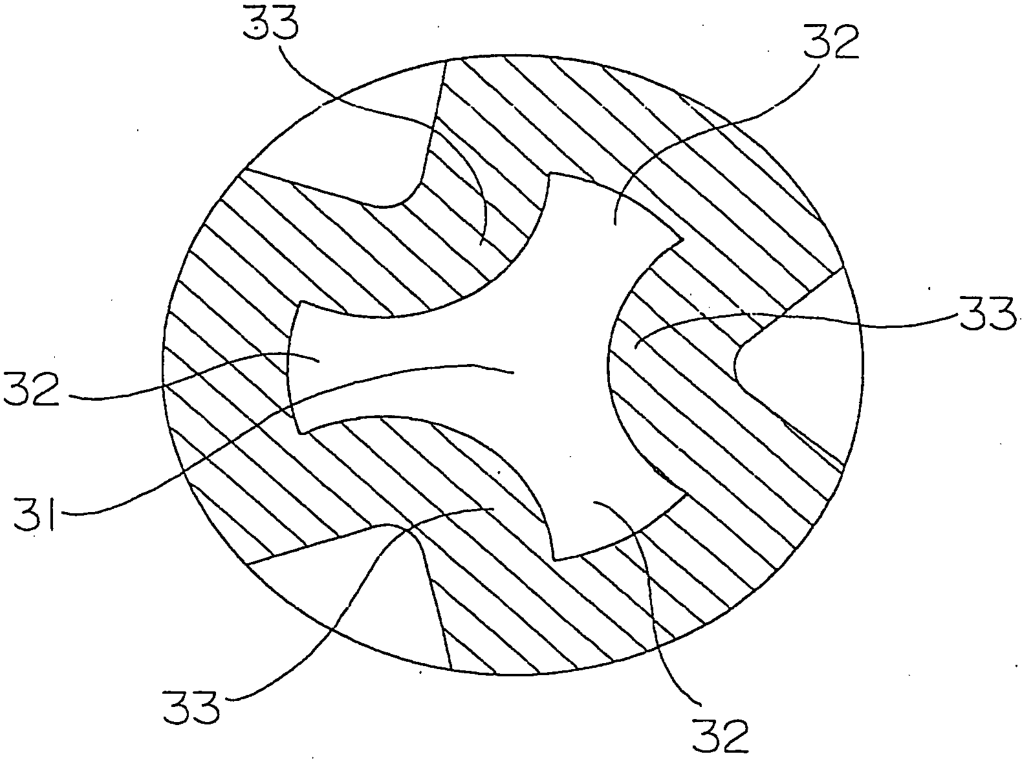


FIG. 4

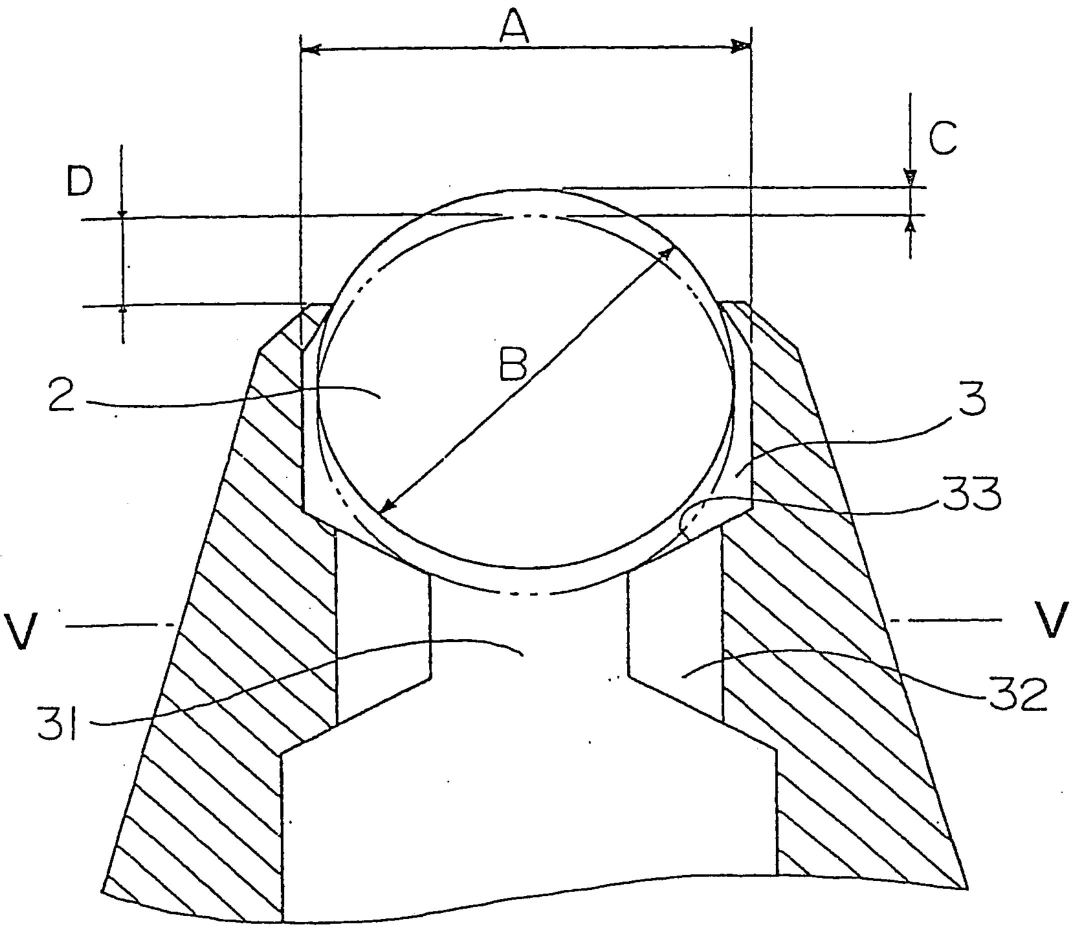


FIG. 5

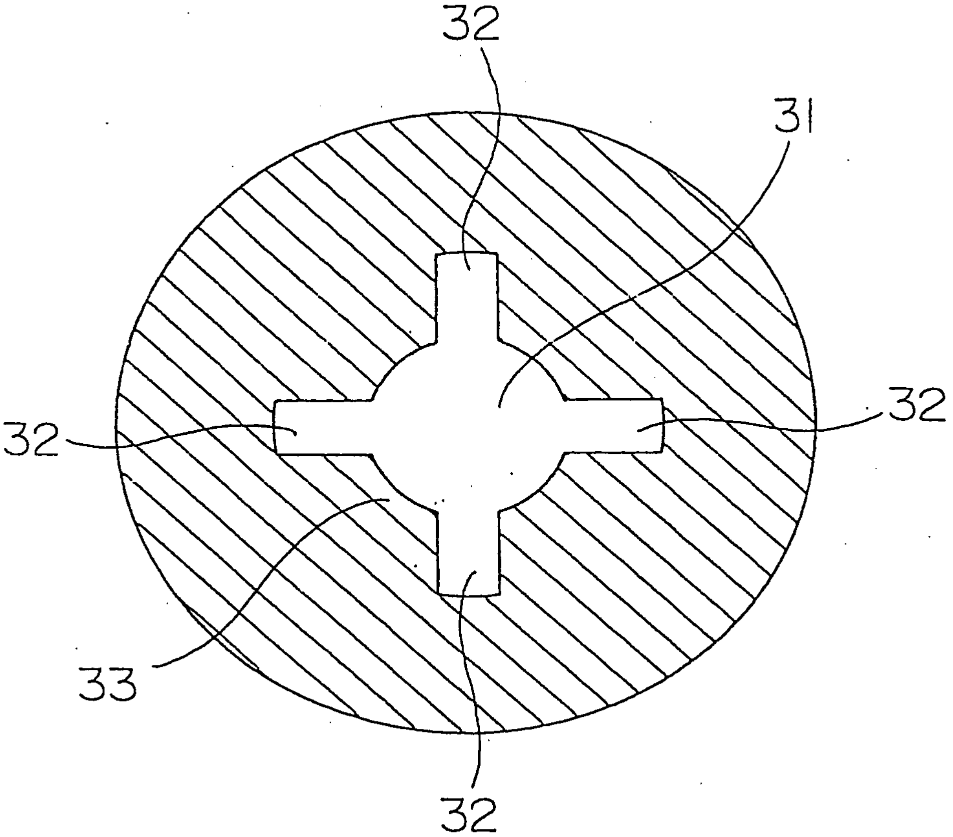
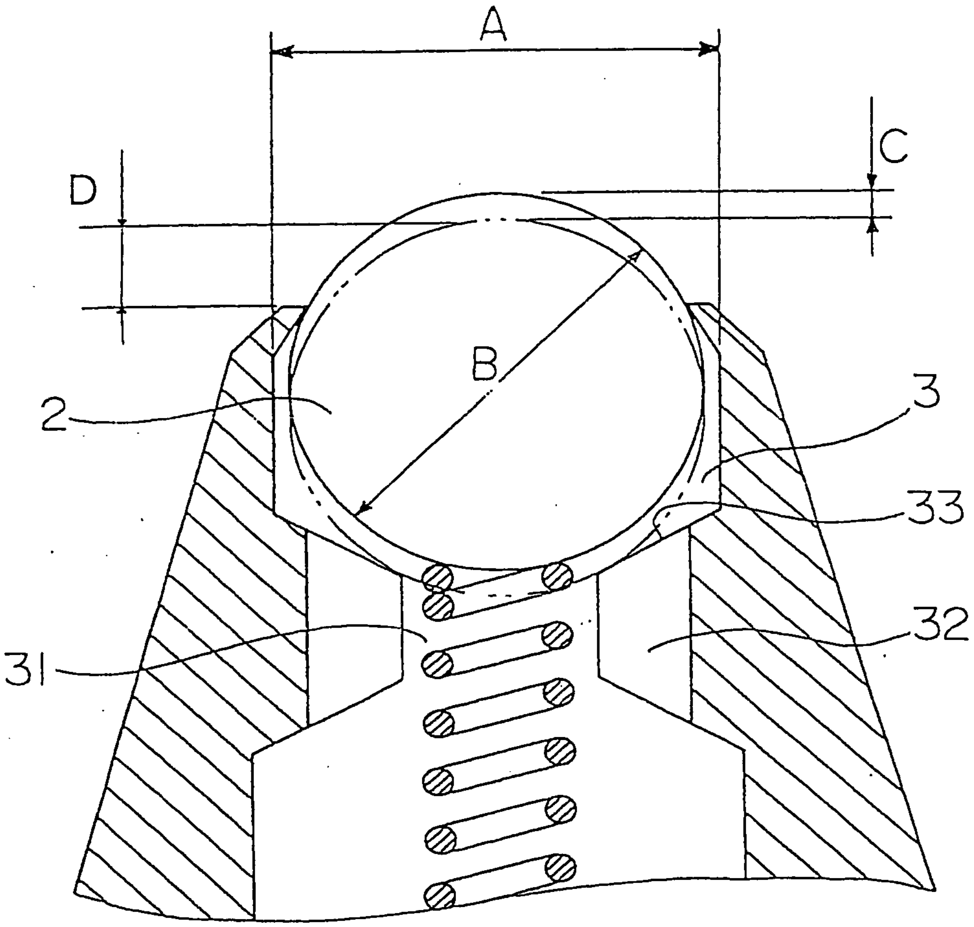


FIG. 6



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OCT 1 4 2004
PATENT & TRADEMARK OFFICE

UNITED STATES POSTAGE
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OCT 08 2003
MAILED FROM ZIP CODE 20036

Inventor: Tetsuya Hattori, et al.

Application No.: NEW APPLICATION
Title: BALLPOINT-PEN INK COMPOSITIONS

Atty Docket No.: IID-0211

Filing Date: October 8, 2003 ne

17858 U.S. PTO
10/680254
100803

Documents Filed:
- Utility Patent Application Transmittal (1 page)
- Fee Transmittal (1 page)
- Specification (33 pages)
- Oath or declaration (5 pages)
- Associate Power of Attorney (1 page)
- Recordation Form Cover Sheet (1 page)
- Assignment (1 page)

IDS w/PTO-1449 + 1 ref
Charge $810.00 to deposit account 18-0013
Preliminary Amendment (3 pages) ne

Via: PTO Daily Run
Sender's Initials: DTN/LC/nb

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PATENT & TRADEMARK OFFICE

Date: October 8, 2003 nn

LC.

o.: IID-0211

Inventor: Tetsuya Hattori, et a.

Application No.: NEW APPLICATION
Title: BALLPOINT-PEN INK COMPOSITION

ber 8, 2003 ne

Documents Filed:
Utility Patent Application Transmittal (1 page)
Fee Transmittal (1 page)
Specification (33 pages)

IDS w/PTO-1449 + 1 ref
Charge $810.00 to deposit account 18-0013
Preliminary Amendment (3 pages) ne

Inventor: Tetsuya Hattori, et al.

Atty Docket No.: IID-0211

Application No.: NEW APPLICATION
Title: BALLPOINT-PEN INK COMPOSITIONS

Filing Date: October 8, 2003 nr

L.C.

2003 nn

Documents Filed:
Utility Patent Application Transmittal (1 page)
Fee Transmittal (1 page)
Specification (33 pages)
Oath or declaration (5 pages)
Associate Power of Attorney (1 page)
Recordation Form Cover Sheet (1 page)
Assignment (1 page)

IDS w/PTO-1449 + 1 ref
Charge $810.00 to deposit account 18-0013
Preliminary Amendment (3 pages) nu

Via: U.S. Mail (Returned Postcard)
Serial No.:

Date:

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OCT 0 8 2003
JC34
PATENT & TRADEMARK OFFICE

L.C.

OIPE
OCT 14 2004
PATENT & TRADEMARK OFFICE

PTO/SB/05 (08-03)
Approved for use through 07/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	IID-0211
First Inventor	Tetsuya Hattori
Title	BALLPOINT-PEN INK COMPOSITIONS
Express Mail Label No.	

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO:
MS Patent Application
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

1. ☒ Fee Transmittal Form (e.g., PTO/SB/17) *(Submit an original, and a duplicate for fee processing)*
2. ☐ Applicant claims small entity status. See 37 CFR 1.27.
3. ☒ Specification [*Total Pages* 33]
   (preferred arrangement set forth below)
   - Descriptive title of the invention
   - Cross Reference to Related Applications
   - Statement Regarding Fed sponsored R & D
   - Reference to sequence listing, a table, or a computer program listing appendix
   - Background of the Invention
   - Brief Summary of the Invention
   - Brief Description of the Drawings *(if filed)*
   - Detailed Description
   - Claim(s)
   - Abstract of the Disclosure
4. ☐ Drawing(s) *(35 U.S.C. 113)* [*Total Sheets*]
5. Oath or Declaration [*Total Sheets* 5]
   a. ☒ Newly executed (original or copy)
   b. ☐ Copy from a prior application (37 CFR 1.63(d)) *(for continuation/divisional with Box 18 completed)*
      i. ☐ DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☐ Application Data Sheet. See 37 CFR 1.76
7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program *(Appendix)*
8. Nucleotide and/or Amino Acid Sequence Submission *(if applicable, all necessary)*
   a. ☐ Computer Readable Form (CRF)
   b. Specification Sequence Listing on:
      i. ☐ CD-ROM or CD-R (2 copies); or ii. ☐ Paper
   c. ☐ Statements verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

9. ☒ Assignment Papers (cover sheet & document(s))
10. ☐ 37 CFR 3.73(b) Statement *(when there is an assignee)* ☐ Power of Attorney
11. ☐ English Translation Document *(if applicable)*
12. ☒ Information Disclosure Statement (IDS)/PTO-1449 ☒ Copies of IDS Citations
13. ☒ Preliminary Amendment
14. ☒ Return Receipt Postcard (MPEP 503) *(Should be specifically itemized)*
15. ☐ Certified Copy of Priority Document(s) *(if foreign priority is claimed)*
16. ☐ Nonpublication Request under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent.
17. ☒ Other: Associate Power of Attorney

18. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:*

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: ______

Prior application information: Examiner ______ *Art Unit:* ______

For CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

19. CORRESPONDENCE ADDRESS

☒ Customer Number: 23353 *OR* ☐ Correspondence address below

Name	RADER, FISHMAN & GRAUER PLLC David T. Nikaido				
Address	1233 20th Street, N.W. Suite 501				
City	Washington	*State*	DC	*Zip Code*	20036
Country	US	*Telephone*	(202) 955-3750	*Fax*	(202) 955-3751

Names (Print/Type)	David T. Nikaido/Lee Cheng	*Registration Nos(Attorney/Agent)*	22,663/40,949
Signature		*Date*	October 8, 2003

O I P E

OCT 14 2004

PATENT & TRADEMARK OFFICE

Use in lieu of PTO/SB/17 (08-03)
(Form updated to reflect FY 2004 fees effective 10/1/03)

FEE TRANSMITTAL for FY 2004

Effective 10/01/2003, Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 810.00

Complete if Known	
Application Number	NEW APPLICATION
Filing Date	October 8, 2003
First Named Inventor	Tetsuya Hattori
Examiner Name	Not Yet Assigned
Art Unit	N/A
Attorney Docket No.	IID-0211

METHOD OF PAYMENT *(check all that apply)*

☐ Check ☐ Credit Card ☐ Money Order ☐ Other ☐ None

☒ Deposit Account:

Deposit Account Number: 18-0013

Deposit Account Name: Rader, Fishman & Grauer PLLC

The Director is authorized to: *(check all that apply)*

☒ Charge fee(s) indicated below ☒ Credit any overpayments

☒ Charge any additional fee(s) during the pendency of this application

☐ Charge fee(s) indicated below, except for the filing fee

to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1001	770	2001	385	Utility filing fee	770.00
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) ($) 770.00

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

			Extra Claims		Fee from below		Fee Paid
Total Claims	7	-20** =		x		=	0.00
Independent Claims	1	-3** =		x		=	0.00
Multiple Dependent						=	

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) 0.00

***or number previously paid, if greater; For Reissues, see above*

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge – late filing fee or oath	
1052	50	2052	25	Surcharge – late provisional filing fee or cover sheet.	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for *ex parte* reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive – unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	40.00
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) ____________

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($) 40.00

SUBMITTED BY				(Complete *(if applicable)*)	
Names (Print/Type)	David T. Nikaido/Lee Cheng	*Registration Nos. (Attorney/Agent)*	22,663/40,949	*Telephone*	(202) 955-3750
Signature				*Date*	October 8, 2003

OIPE
OCT 14 2004
PATENT & TRADEMARK OFFICE

Docket No.: IID-0211

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

HATTORI et al.

Application No.: NEW APPLICATION

Filed: Concurrently herewith

For: Ballpoint-Pen Ink Compositions

Art Unit: N/A

Examiner: Not Yet Assigned

PRELIMINARY AMENDMENT

MS Patent Application
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

I. INTRODUCTORY COMMENTS

Prior to the initial examination, please amend the above-identified application as follows:

II. AMENDMENTS TO THE DRAWINGS

(THERE ARE NO DRAWINGS TO THIS APPLICATION)

III. AMENDMENTS TO THE CLAIMS

(THERE ARE NO AMENDMENTS TO THE CLAIMS)

IV. AMENDMENT TO THE ABSTRACT

(THERE ARE NO AMENDMENTS TO THE ABSTRACT)

V. AMENDMENTS TO THE SPECIFICATION

Please delete the 1st through 7th paragraphs on page 20, starting on line 2, as follows:

~~BRIEF DESCRIPTION OF THE DRAWINGS~~

~~Figure 1 is a schematic view of one example of the ballpoint pen according to the invention.~~

~~Figure 2 is a longitudinal sectional schematic view of the ballpoint pen tip part of the ballpoint pen in Figure 1.~~

~~Figure 3 is a sectional view of Figure 2 at X-X.~~

~~Figure 4 is another longitudinal sectional schematic view of the ballpoint pen tip part of the ballpoint pen according to the present invention.~~

~~Figure 5 is a sectional view of Figure 5 at Y-Y.~~

~~Figure 6 is another longitudinal sectional schematic view of the ballpoint pen tip part of the ballpoint pen according to the invention.~~

******

REMARKS

The above amendments to the specification have been made to deleting the description of the drawings since no drawings have been submitted with this application. No new matter has been added.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 18-0013, under Order No. OGW-0290 from which the undersigned is authorized to draw.

Dated: October 8, 2003

Respectfully submitted,

By____________________
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SPECIFICATION

TITLE OF THE INVENTION

Ballpoint-pen ink compositions

FIELD OF THE INVENTION

The present invention relates to a ballpoint-pen ink composition. More specifically, the invention relates to a ballpoint-pen ink composition capable of drawing a satisfactory line on the surfaces of various materials to be written, the materials are papers, non-permeable materials and fibrous materials.

BACKGROUND OF THE INVENTION

In general, a ballpoint pen employing an oil-based ink conventionally has a simple structure installing in its holder a ballpoint-pen refill having a ball-holding metal tip engaged with one end of the ink reservoir tube.

While an oil-based ballpoint pen having a structure described above can be provided at a low price, it should be constructed in such a manner that the gap between the ball and the tip should be reduced in order to avoid the drip of the ink via the gap of the ball and the tip when the tip is in a downward direction, i.e., when the pen stands on its head, and it also should have an ink whose viscosity at ambient temperature which is as high as thousands to ten thousands mPa·s. Accordingly, it has a heavy touch upon drawing, and tends to exhibits a pale line. Also in order to avoid the blurred line due to the evaporation of an organic solvent from the pen tip, the organic solvent should be one that has a high boiling point and is difficult to be evaporated.

While a conventional ink for a ballpoint pen is intended to be used in writing on the surface of a paper and has no practical problems with regard to the dryness of a drawn line because of the permeation of the organic solvent in the ink into the internal region of the paper, it poses a problem such as a deposition of a still-wet ink onto a hand or a dirt on a non-written blank on the paper upon touching the drawn line with a hand due to no permeation of the organic solvent when it is drawn on a non-permeable material.

Also while it was attempted to reduce the viscosity of an ink for the purpose of obtaining a light pen touch and an intensely colored line, no sufficient performance was obtained in the drawing on a non-permeable material described above (JP-A-63-309571).

SUMMARY OF THE INVENTION

Now we found, in an effort to overcome the problems associated with a conventional oil-based ink for a ballpoint pen described above, that by containing at least a colorant, an organic solvent as a main solvent whose vapor pressure is about 665 to 6650Pa (5.0 to 50 mmHg)(20°C) and a shear-viscosity reducing agent an ink composition for a ballpoint pen capable of drawing a satisfactory line on the surfaces not only of papers but also of non-permeable materials such as glasses and plastics as well as fibrous materials such as fabrics can be provided.

One embodiment of the invention is a ballpoint-pen ink composition comprising at least a colorant, an organic solvent as a main solvent whose vapor pressure is 5.0 to 50 mmHg (20°C) and a shear-viscosity reducing agent. In preferred embodiments, said organic solvent is one or more solvents selected from alcohols, glycol ethers and hydrocarbons, said organic solvent is selected from n-propyl alcohol, isopropyl alcohol and propylene glycol monomethyl ether, and the ink viscosity at the shear speed of $3.84S^{-1}$ is about not less than 10 mPa·s(20°C) and the shear-viscosity reduction index is about 0.3 to 0.99.

In the present invention, by using as a main solvent an organic solvent whose vapor pressure at 20°C is about 5.0 to 50 mmHg and which thus is readily evaporated, the dryness of a drawn line is excellent even when the line is drawn on a non-permeable material such as a glass or a plastic.

An organic solvent whose vapor pressure at 20°C is about 5.0 to 50 mmHg may for example be an alcoholic organic solvent such as ethyl alcohol (45), n-propyl alcohol (14.5), isopropyl alcohol (32.4), n-butyl alcohol (5.5), isobutyl alcohol (8.9), s-butyl alcohol (12.7), t-butyl alcohol (30.6), t-amyl alcohol (13.0) and the like,

a glycol ether-based organic solvent such as ethylene glycol monomethyl ether (8.5), ethylene glycol diethyl ether (9.7), ethylene glycol monoisopropyl ether (6.0), propylene glycol monomethyl ether (7.6) and the like,

a hydrocarbon-based organic solvent such as n-heptane (35.0), n-octane (11.0), isooctane (41.0), methylcyclohexane (37.0), ethylcyclohexane (10.0), toluene (24.0), xylene (5.0 to 6.0), ethylbenzene (7.1) and the like,

a ketone-based organic solvent such as methyl isobutyl ketone (16.0), methyl n-propyl ketone (12.0), methyl n-butyl ketone (12.0), di-n-propyl ketone (5.2) and the like,

an ester-based organic solvent such as n-butyl formate (22.0), isobutyl formate (33.0), n-propyl acetate (25.0), isopropyl acetate (48.0), n-butyl acetate (8.4), isobutyl acetate (13.0), ethyl propionate (28.0), n-butyl propionate (45.0), methyl butyrate (25.0), ethyl butyrate (11.0) and the like.

The value in each bracket is the vapor pressure of the respective solvent at 20°C.

Among the organic solvents described above, those employed preferably are selected from alcohols, glycol ethers and hydrocarbons, and n-propyl alcohol and isopropyl alcohol among the alcohols and propylene glycol monomethyl ether among the glycol ethers being employed preferably because of the excellent solubilities of various resins and additives employed simultaneously.

Any of the organic solvents described above is employed in an amount of 50% or more by weight in the solvents.

Two or more of the solvents described above may be employed in combination.

Any other solvent having a vapor pressure less than 5.0 mmHg (665Pa) or exceeding 50 mmHg (6650Pa) may be added if desired, such as benzyl alcohol, ethylene glycol, diethylene glycol, propylene glycol, benzyl glycol, ethylene glycol monobutyl ether, ethylene glycol monohexyl ether, ethylene glycol monophenyl ether, diethylene glycol monoethyl ether, diethylene glycol monophenyl ether, propylene glycol monoethyl ether, propylene glycol monophenyl ether, dipropylene glycol monoethyl ether, dipropylene glycol monophenyl ether, tripropylene glycol monomethyl ether, tripropylene glycol monoethyl ether, tripropylene glycol monophenyl ether, methyl lactate, ethyl lactate, γ-butyrolactone and the like.

The ink composition for a ballpoint pen also contains a shear-viscosity reducing agent.

By adding such a shear-viscosity reducing agent, the leakage of ink via a gap between a ball and a tip when the pen is not used can be avoided, and the follower of the ink when the pen is allowed to stand with its tip up (normal standing position) can also be avoided.

The ink composition for a ballpoint pen has a ink viscosity measured at 20°C by a type E viscometer at the shear speed of $3.84S^{-1}$ of not less than about 10 mPa·s(20°C),preferably about 10 to 1000 mPa·s(20°C), preferably with the shear-viscosity reduction index being about 0.3 to 0.99, more preferably about 0.5 to 0.99.

By exhibiting the range of a viscosity and a shear-viscosity reduction index within the ranges specified above, the prevention of the leakage and the follower of the ink can further be ensured.

When a pigment is employed as a colorant, the aggregation or sedimentation of the pigment can be suppressed.

An ink viscosity less than about 10 mPa·s gives an inappropriate effect of the shear-viscosity reducing agent, which may affect the ink supply performance or the drawing performance.

A shear-viscosity reduction index (n) mentioned above is a value calculated from the values obtained by a hydrokinetic measurement using a viscometer such as a shearing stress value (T) and a shearing speed value (j) on the basis of an experimental equation $T=Kj^n$ wherein K is a non-Newton viscosity coefficient.

As the shear-viscosity reducing agent described above may be any known compound.

Examples of the shear-viscosity reducing agents are listed below.

1) Crosslinked acrylic resins and emulsions thereof, crosslinked N-vinyl carboxylic acid amide polymers or copolymers.

2) Non-crosslinked N-vinyl carboxylic acid amide polymers or copolymers and emulsions thereof.

3) Hydrogenated castor oils.

4) Waxes such as fatty acid amide waxes, oxidized

polyethylene waxes and the like.

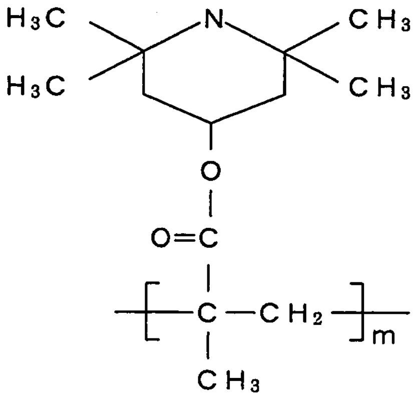
5) Fatty acid metal salts such as aluminium stearate, aluminium palmitate, aluminium octylate, aluminium laurate and the like.

6) Other organic compounds such as dibenzylidene sorbitol, dextrin fatty acid esters, N-acylamino acid-based compounds and the like.

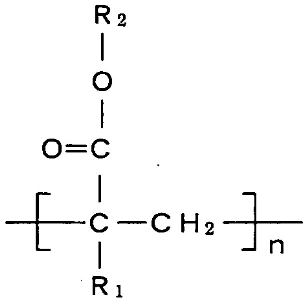
7) Clay based inorganic compounds such as smectites (montmorillonites), bentonites, hectorites, silica and the like.

8) Non crosslinked Acrylic copolymers of including polymeric chain units represented by Formula (1) and by Formula (2) respectively:

(Formula 1)



(Formula 2)

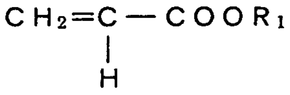


wherein R_1 is an alkyl group having 1 to 12 carbon atoms, R_2 is an alkyl group having 1 to 24 carbon atoms, and m and n represent polymerization degrees of thousands to hundred thousands.

These non-crosslinked acrylic copolymers may be employed in an amount of about 0.1 to 10% by weight based on an ink composition when the solvents selected from alcohols and glycol ethers.

9) Another non-crosslinked acrylic copolymers of acrylic acid or methacrylic acid with acrylates represented by Formula (3) or methacrylates reprensented by Formula (4):

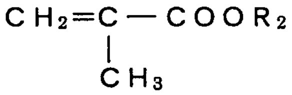
(Formula 3)



$$CH_2=\underset{\substack{|\\ H}}{C}-COOR_1$$

[wherein R_1 is an alkyl group having 1 to 12 carbon atoms]

(Formula 4)



$$CH_2=\underset{\substack{|\\ CH_3}}{C}-COOR_2$$

[wherein R_2 is an alkyl group having 1 to 12 carbon atoms].

These non-crosslinked acrylic copolymers may be employed in an amount of about 0.1 to 10% by weight based on an ink composition when the solvents selected from alcohols and glycol ethers.

Since the blurring of a drawn line can be suppressed by adding a shear-viscosity reducing agent described above, the drawn line is satisfactorily formed without blurring not only on a paper but also on a highly permeable material such as a fibrous material including a fabric.

Examples of a solvent dye mentioned above is:

VARIFAST Black 3806 (C.I. Solvent Black 29), 3807 (trimethylbenzylammonium salt of C.I. Solvent Black 29), Spirit Black SB (C.I. Solvent Black 5), SPIRON Black GMH (C.I. Solvent Black 43), VARIFAST Red 1308 (salt forming form of C.I. Basic Red 1 dye and C.I. Acid Yellow 23 dye), VARIFAST Yellow AUM (salt forming form of C.I. Basic Yellow 2 dye and C.I. Acid Yellow 42 dye), SPIRON Yellow C2GH (organic acid salt of C.I. Basic Yellow 2), SPIRON Violet CRH (C.I. Solvent Violet 8-1), VARIFAST Violet 1701 (salt forming form of C.I. Basic Violet 1 and C.I. Acid Yellow 42 dye), SPIRON Red CGH (organic acid salt of C.I. Basic Red 1), SPIRON Pink BH (C.I. Solvent Red 82), Nigrosine Base EX (C.I. Solvent Black 7), Oil Blue 613 (C.I. Solvent Blue 5), Neozapon Blue 808 (C.I. Solvent Blue 70) and the like.

A pigment may for example be an inorganic pigment such as a carbon black, ultramarine and titanium dioxide pigment, an organic pigment such as an azo-based pigment, phthalocyanine-based pigment, indigo pigment, thioindigo pigment, thren pigment, quinacridone-based pigment, anthraquinone-based pigment, thron-based pigment, diketopyrrolopyrrole-based pigment, dioxazine-based pigment, perylene-based pigment, perinone-based pigment and isoindolinone-based pigment, a metal pigment such as an aluminium powder or aluminium powder whose surface is treated with a colored resin, a metal gloss pigment obtained by forming a metal vapor deposition film such as that of aluminium on a transparent or colored transparent film, a metal pigment having a thickness of 0.01 to 0.1 μm obtained by peeling a metal vapor deposition film such as that of aluminium formed on a substrate such as a film, a colloidal particle having a mean particle size of 5 to 30 nm selected from gold, silver, platinum and copper, a fluorescent pigment, light-storing pigment, pearl pigment obtained by coating the surface of a core which is a naturally occurring mica, synthetic mica, glass flake, alumina and transparent film with a metal oxide such as titanium oxide, and the like.

Any of the colorants listed above may be employed alone or in combination of two or more, and employed in an amount of 3 to 40% by weight based on an ink composition.

Furthermore, an inventive ink composition for a ballpoint pen may contain, as desired, a lubricant including a higher fatty acid such as oleic acid, a nonionic surfactant having a long chain alkyl group, a polyether-modified silicone oil, a triester thiophosphate such as tri(alkoxycarbonylmethylester) thiophosphate or tri(alkoxycarbonylethylester) and the like, and an excellent inhibitory effect on the wearing of a ball housing can be obtained especially when using a monophosphate of a polyoxyethylene alkyl ether or polyoxyethylene alkylaryl ether or a diphosphate of a polyoxyethylene alkyl ether or polyoxyethylene alkylaryl ether as well as a metal salt, ammonium salt, amine salt and alkanolamine salt thereof.

Moreover, an oil-based ink for a ballpoint pen described above may include the following resins as an additve for the purpose of inhibiting the blurring of a drawn line, improving the fixing performance and promoting the solidness.

Those exemplified typically are ketone resins, ketone-formaldehyde resins, amide resins, alkyd resins, rosin-modified resins, rosin-modified phenol resins, phenol resins, xylene resins, polyvinylpyrrolidone, α- and β-pynene/phenol condensate polymer resins, polyvinyl butyral resins, acryl resins and the like.

If desired, a wax such as carnauba wax, candelilla wax, rice wax, beeswax, ozokerite, ceresin, montan wax, montanic acid wax, montan ester wax and the like may also be added.

When applied to a ballpoint pen in which an ink composition described above is filled directly into an ink reservoir tube and the back end of the ink composition is provided with a ink follower protector, an air bubble, if any, in the ink leads to a gas aggregation as time elapses, resulting in an adverse effect on the ink supply upon writing, and an air bubble in the pen tip may lead to a disability of writing, and it is thus preferred to remove such an air bubble chemically by adding hydroxylamine or a salt thereof, a hydroxylamine derivative or a salt thereof, a reaction product of n-butylaldehyde and aniline, a derivative of a reaction product of n-butylaldehyde and aniline and the like.

Such a compound may for example be hydroxylamine, N-methylhydroxylamine, N,N-diethylhydroxylamine, N-(t-butylhydroxylamine, N-carbobenzoxylhydroxylamine, N,N-dibenzylhydroxylamine, N-benzoyl-N-phenylhydroxylamine, N-(benzyloxy)carbamic acid t-butyl ester, O-methylhydroxylamine, O-isobutylhydroxylamine, O-arylhydroxylamine, O-benzylhydroxylamine, N,O-dimethylhydroxylamine, N,N,O-triacetylhydroxylamine, N-methoxy-N-methylacetamide and n-butylaldehydeaniline.

An ink composition described above is filled in a ballpoint pen having a ballpoint-pen tip fitted in the drawing side end of the pen.

The structure of a ballpoint pen is described below (see Figures 1 to 6).

While the structure and the shape of a ballpoint pen is not limited particularly, it may be exemplified as ballpoint pen 1 having an ink reservoir tube 4 filled with ink composition 5 wherein said ink reservoir tube 4 is connected to a ballpoint-pen tip which holds ball 2 in its end and the end of ink composition 4 is brought into close contact with ink follower preventing body composition 6.

The structure of a ballpoint-pen tip may be of any conventional mechanism, such as a mechanism in which the metal pipe tip region is deformed by a force given externally toward the inside to form ball holder 3 which is allowed to hold ball 2 whereby forming a tip end provided with center hole 31, ink introducing hole 32 and ball housing 33 as an integrated unit (see Figures 2 and 3), a mechanism in which a metal material is subjected to a grinding process for example by using a drill and the like to form a tip and ball holder 3 is allowed to hold ball 2 whereby providing center hole 31, radial ink introducing hole 32 and ball housing 33 (see Figures 4 and 5), or a mechanism in which a ball is pressed forward using a spring (see Figure 6), as well as a mechanism in which a ball housing made from a resin is provided inside of a tip made from a plastic.

More specifically, a ballpoint-pen tip described above preferably has a radial movable distance (A-B) of 3 to 15% of the outer ball diameter [100x(A-B)/outer ball diameter] and an axial movable distance (C) of 5 to 15% of the outer ball diameter [100x(C)/outer ball diameter] and its ball protrusion length (D) over the tip end in the state where the back of the ball is in contact with the ball housing provided in the tip is 20 to 29% of the outer ball diameter [100x(D)/outer ball diameter].

The conditions specified above are essential for enabling the drawing on the surfaces of various materials which are not only papers but also non-permeable material and fibrous material and also for enabling the formation of a satisfactorily drawn line, and ratios of the radial and axial movable distances of a ball to the outer ball diameter deviating from the ranges specified above results in a difficulty in controlling the flow rate of the ink composition appropriately, which leads to a blurred line or an excessive ink deposition on the drawing surface due to an excessive flow of the ink, thus posing a difficulty in drawing a satisfactory line.

A ratio of the ball protrusion length to the outer ball diameter deviating from the range specified above leads to a difficulty in achieving a smooth pen touch both on a non-permeable material and on a paper or fibrous material simultaneously.

Thus, a ratio of the ball protrusion length to the outer ball diameter less than 20% allows the tip end to be brought readily into a close contact with the surface to be drawn, which leads to a scratch, resulting in a difficulty in drawing smoothly.

A ratio exceeding 29% leads to a difficulty in exerting a function of introducing an ink via the gap (clearance) between the ball and the ballpoint-pen tip due to the close contact of the drawing surface with said gap, which is essential for drawing a line by allowing the ink to be introduced via the clearance between the ball and the ballpoint-pen tip whereby compensating any insufficient transference of the ink due to the inhibition of the smooth rotation of the ball by a non-permeable material if the drawing is made on such a material.

A ball mentioned above may be one made from a highly hard alloy, stainless steel, ruby, ceramic, resin, rubbers and the like whose diameter is 0.3 to 30.0 mm.

A pen filled with the present ink includes one provided with a rotation mechanism in the end of the drawing tip that allows a line to be drawn by means of a rotating action similar to that of a ball.

An ink reservoir tube containing an ink composition described above is a molded article made from a thermoplastic resin such as polyethylene, polypropylene, polyethylene terephthalate, nylons and the like.

By using a transparent, colored and transparent or semi-transparent molded article as an ink-reservoir tube described above, the color and the residual amount of the ink can be checked visually.

In addition to a direct connection of a tip to an ink reservoir tube described above, a connection via a connecting part may be employed between the ink reservoir tube and the tip.

An ink reservoir tube described above may be in the form of a refill to be housed in the pen cylinder, and the cylinder fitted with a tip in its end may itself be employed as an ink reservoir tube in which an ink is filled directly into the inside of the cylinder.

The back end of an ink composition contained in an ink reservoir tube described above is charged with an ink follower preventing body.

An ink follower preventing body composition described above consists of a non-volatile liquid or a sparingly volatile liquid.

Those exemplified typically are petrolatum, spindle oil, castor oil, olive oil, purified mineral oil, liquid paraffin, polybutene, α-olefin, α-olefin oligomer or cooligomer, dimethyl silicone oil, methylphenyl silicone oil, amino-modified silicone oil, polyether-modified silicone oil, fatty acid-modified silicone oil and the like, any of which can be employed alone or in combination of two or more.

A non-volatile liquid and/or sparingly volatile liquid mentioned above is preferably increased to a suitable viscosity by adding a gelling agent, which may for example be a surface-hydrophobically-treated silica, surface-methylated microparticle silica, aluminium silicate, swelling mica, a clay-based thickening agent such as a hydrophobically treated bentonite or montmorillonite, metal soaps of fatty acids such as magnesium stearate, calcium stearate, aluminium stearate, zinc stearate and the like, tribenzylidene sorbitol, fatty acid amide, amide-modified polyethylene wax, hydrogenated castor oil, a dextrin-based compound such as a fatty acid dextrin and a cellulose-based compound.

It is also possible to use a liquid ink follower preventing body composition and a solid ink follower preventing body simultaneously.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a schematic view of one example of the ballpoint pen according to the invention.

Figure 2 is a longitudinal sectional schematic view of the ballpoint-pen tip part of the ballpoint pen in Figure 1.

Figure 3 is a sectional view of Figure 2 at X-X.

Figure 4 is another longitudinal sectional schematic view of the ballpoint-pen tip part of the ballpoint pen according to the present invention.

Figure 5 is a sectional view of Figure 5 at Y-Y.

Figure 6 is another longitudinal sectional schematic view of the ballpoint-pen tip part of the ballpoint pen according to the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

An ink composition for a ballpoint pen according to the present invention is prepared, in the case that the colorant is a dye, by adding the dye to an organic solvent solution in which a shear-viscosity reducing agent has previously been dissolved or dispersed if necessary together with resins and various additives followed by stirring and dissolving.

It is prepared, in the case that the colorant is a pigment, by adding resins and various additives as desired to an organic solvent solution in which a shear-viscosity reducing agent has previously been dissolved or dispersed, stirring and dissolving, and then adding a dispersion formed previously by dispersing the pigment in a solvent prepared separately, and then stirring.

EXAMPLES

The compositions of the inks of EXAMPLES and COMPARTIVES are shown in Table. The compositions are represented by parts by weight.

(table 1)

Starting materials		EXAMPLES									
	Remarks	1	2	3	4	5	6	7	8	9	10
Black dye	(1)	10.0	10.0						10.0	10.0	10.0
Blue dye	(2)			10.0							
Red dye	(3)				8.0						
Carbon black						6.0					
Metal powder pigment	(4)						6.0				
Pink fluorescent pigment	(5)							10.0			
Shear-viscosity reducing agent A	(6)	1.7	1.2		1.0		1.9				
Shear-viscosity reducing agent B	(7)			2.0							
Shear-viscosity reducing agent C	(8)					5.0		15.0	7.0		
Shear-viscosity reducing agent D	(9)									8.0	
Shear-viscosity reducing agent E	(10)										7.0
Phenol resin	(11)	7.0			15.0		12.0				
Ketone-formaldehyde resin	(12)		15.0	15.0					5.5	10.0	7.0
Polyvinylbutyral	(13)					16.0					
Polyvinylpyrrolidone	(14)					4.0					
Acrylic resin	(15)							9.0			
Polyoxyethylene alkyl ether phosphate	(16)	5.0	5.0	1.0	2.0		2.0	2.0	5.0	5.0	5.0
Polyoxyethylene-modified silicone	(17)	0.3	0.3			0.3			0.3	0.3	
Polyoxyethylene alkylamine	(18)					1.5	2.0	5.0			
Ethyl alcohol		10.0						59.0			
n-Propyl alcohol			58.5	72.0		57.2	76.1		62.2	56.7	
Isopropyl alcohol					74.0						
Propylene glycol monomethylether		66.0									61.0
Methyl lactate			10.0			10.0			10.0	10.0	10.0
Viscosity (3.84S^{-1}) mPa•s		422	256	1331	218	243	1523	1280	120	166	122
Shear-viscosity reduction index (n)		0.60	0.73	0.28	0.71	0.76	0.55	0.62	0.86	0.85	0.93

(table 2)

Starting materials		COMPARATIVES					
	Remarks	1	2	3	4	5	6
Black dye	(1)	10.0	20.0				
Blue dye	(2)			15.0			
Carbon black					6.0		
Metal powder pigment	(4)					6.0	
Pink fluorescent pigment	(5)						10.0
Shear-viscosity reducing agent A	(6)		1.0				
Phenol resin	(11)	5.0	10.0			44.0	
Ketone-formaldehyde resin	(12)			30.0	20.0		
Polyvinylbutyral	(13)				6.0		
Polyvinylpyrrolidone	(14)			3.0			
Acrylic resin	(15)						14.0
Polyoxyethylene alkyl ether phosphate	(16)	5.0	2.0		2.0	2.0	1.0
Polyoxyethylene-modified silicone	(17)	0.3					
Polyoxyethylene alkylamine	(18)					2.0	
Oleic acid	(19)		2.0	2.0			
Ethyl alcohol							75.0
n-Propyl alcohol		69.7				46.0	
Isopropyl alcohol					66.0		
Ethylene glycol monophenyl ether			55.0	40.0			
Benzyl alcohol			10.0	10.0			
Methyl lactate		10.0					
Viscosity ($3.84S^{-1}$) mPa*s		7.8	5400	18000	269	601	78
Shear-viscosity reduction index (n)		0.98	0.83	0.99	0.90	0.67	0.87

The starting materials shown in Table are described below in the order of the designated number.

(1) C.I. Solvent Black 7 [ORIENT CHEMICAL INDUSTRIES, LTD., trade name: Nigrosine BASE EX]

(2) C.I. Solvent Blue 5 [ORIENT CHEMICAL INDUSTRIES, LTD., trade name: OIL BLUE 613]

(3) C.I. Basic Red 1 [HODOGAYA CHEMICAL CO., LTD., trade name: SPIRON RED CGH, organic acid salt of dye]

(4) Aluminium powder mineral spirit dispersion [TOYO ALUMINIUM K.K., trade name: Alpaste 65-066, % Solid: 66%]

(5) Sterling UK, trade name: FLARE F210P

(6) Crosslinked N-vinyl carboxylic acid amide copolymer [NIPPON JUNYAKU CO., LTD., trade name: RHEOGIC GX 20

(7) Fatty acid amide wax benzyl alcohol dispersion [KYOEICO., LTD., trade name: TARLEN BA600, % Solid: 32%]

(8) Alkaline crosslinked acrylic resin (emulsion) [Clariant Polymer, trade name: Viscalex HV-30, % Solid: 30%]

(9) SHIN NAKAMURA CHEMICAL CO., LTD., trade name: 900W [Emulsion (40% solid) of acrylic copolymers including polymer units of Formula (1) and (2) [wherein R1 is CH_3 and R_2 is C_4H_9 as main component]

(10) Rohm & Haas Company, trade name: ASE60 [emulsion (30% solid) of copolymer of methacrylic acid and acrylate]

(11) ARAKAWA CHEMICAL INDUSTRIES, LTD., trade name: TAMANOL 510

(12) Huls Germany, trade name: SYNTHETIC RESIN SK

(13) SEKISUI KAGAKU KOGYO, trade name: Slec BL-1

(14) BASF Germany, trade name: LUBISCOL K-30

(15) JOHNSON POLYMER, trade name: JONCRYL 682

(16) DAI-ICHI KOGYO SEIYAKU CO., LTD., trade name: PRISURF A 207H, mixture of polyoxyethylene alkyl ether monophosphate and polyoxyethylene alkyl ether diphosphate

(17) SHINETSU KAGAKU KOGYO, trade name: Silicone KF-615A

(18) LION AKZO CO., LTD., trade name: ETHOMEEN C25

(19) Kao Corporation, trade name: LUNAC O-P

The ink of each of EXAMPLES and COMPARATIVE was prepared by an ink preparation method as described above, and subjected to the following tests. In the drawing test, an ink described above which had been filled into a ballpoint pen having a stainless steel tip holding a ball 0.7 mm in diameter engaged with one end of a polypropylene pipe was employed.

While a ball 0.7 mm in diameter was employed in EXAMPLES, a stainless steel tip holding a ball whose diameter is 0.3 to 30.0 mm can be employed as desired.

A: Drawn line drying test

Each ink was applied onto a polypropylene film using a 20 mil bar coater at ambient temperature and humidity, and then the time required for drying the applied coating was measured.

B: Drawing test on non-permeable material

Using each ballpoint pen verified to write normally, a line was drawn on a glass and a polyproplyene film.

C: Drawing test on fibrous material

Using each ballpoint pen verified to write normally, a line was drawn on a cotton fabric.

D: Cap off test

Each ballpoint pen verified to write normally was allowed to stand at ambient temperature and humidity for 7 days, and then a line was drawn on a paper.

E: Ink stability test

Each ink in a certain amount was filled in a transparent glass bottle, allowed to stand for 30 days at 50°C, and then examined for the ink state microscopically.

The results of the tests described above are shown below.

(Table 3)

	EXAMPLES									
Test items	1	2	3	4	5	6	7	8	9	10
A: Drawn line drying test	○	◎	◎	◎	◎	◎	◎	◎	◎	◎
B: Drawing test on non-permeable material	○	○	○	○	○	○	○	○	○	○
C: Drawing test on fibrous material	◎	◎	○	◎	◎	◎	◎	○	◎	○
D: Cap off test	◎	◎	◎	◎	◎	◎	○	◎	◎	◎
E: Ink stability test	○	○	○	○	○	○	○	○	○	○

(Table 4)

	COMPARATIVES					
Test items	1	2	3	4	5	6
A: Drawn line drying test	◎	×	×	○	△	◎
B: Drawing test on non-permeable material	○	×	×	×	△	○
C: Drawing test on fibrous material	×	◎	◎	◎	◎	×
D: Cap off test	◎	◎	◎	×	×	△
E: Ink stability test	○	○	○	△	×	×

The evaluation criteria of the results shown in Tables are as described below.

A: Drawn line drying test

◎: The drawn line is dried within a period less than 3 minutes.

○: The drawn line is dried within a period of 3 minutes or longer and less than 5 minutes.

△: The drawn line is dried within a period of 5 minutes or longer and less than 10 minutes.

×: The drawn line is not dried even after 10 minutes.

B: Drawing test on non-permeable material

○: A line can be drawn on a glass and a polypropylene film.

△: A line can be drawn on a polypropylene film but not on a glass.

×: A line can not be drawn on a glass or on a polypropylene film.

C: Drawing test on fibrous material

◎: There is no difference in the line width between immediately after drawing and after allowing to stand.

○: When compared with the line width immediately after drawing, the line width after allowing to stand is increased slightly (less than 120% based on the initial line width).

△: When compared with the line width immediately after drawing, the line width after allowing to stand is increased (120% or more and less than 150% based on the initial line width).

×: When compared with the line width immediately after drawing, the line width after allowing to stand is increased markedly (150% or more based on the initial line width).

D: Cap off test

◎: The blurring disappears in the drawing less than 10 mm.

○: The blurring disappears in the drawing of 10 mm or more and less than 50 mm.

△: The blurring disappears in the drawing of 50 mm or more and less than 200 mm.

×: The blurring does not disappear even in the drawing of 200 mm or more.

E: Ink stability test

○: No change from initial state.

△: Slight precipitation on bottom.

×: Markedly clear layer on top or substantial precipitation on bottom.

In the present invention, by containing an organic solvent as a main solvent whose vapor pressure is 5.0 to 50 mmHg (20°C) and a shear-viscosity reducing agent, a ink composition for a ballpoint pen capable of drawing a satisfactory line on the surfaces of various materials can be provided.

WHAT IS CLAIMED IS:

1. A ballpoint-pen ink composition comprising at least a colorant, an organic solvent as a main solvent whose vapor pressure is about 665 to 6650Pa (5.0 to 50 mmHg) (20°C) and a shear-viscosity reducing agent.

2. A ballpoint-pen ink composition according to Claim 1 wherein said organic solvent is one or more solvents selected from alcohols, glycol ethers and hydrocarbons.

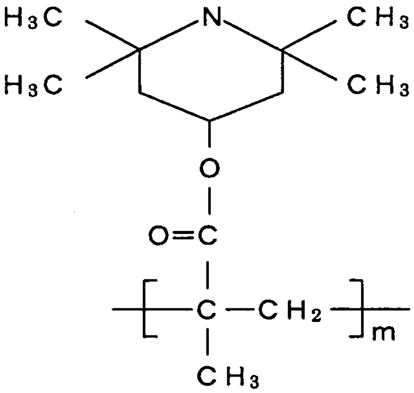
3. A ballpoint-pen ink composition according to Claim 2 wherein said organic solvent is selected from n-propyl alcohol, isopropyl alcohol and propylene glycol monomethyl ether.

4. A ballpoint-pen ink composition according to Claim 1 wherein the ink viscosity at the shear speed of $3.84S^{-1}$ is not less than about 10 mPa·s(20°C) and the shear-viscosity reduction index is about 0.3 to 0.99. .

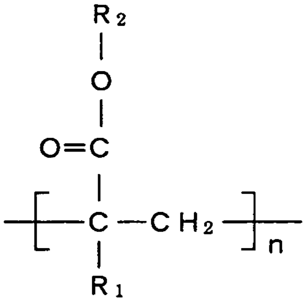
5. A ballpoint-pen ink composition according to Claim 4 wherein the shear-viscosity reduction index is about 0.5 to 0.99.

6. A ballpoint-pen ink composition according to Claim 1 wherein said shear-viscocity reducing agent is selected from non crosslinked acrylic copolymers of consisting essentially of polymeric chain units represented by Formula (1) and by Formula (2) respectively:

(Formula 1)



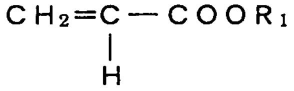
(Formula 2)



[wherein R_1 is an alkyl group having 1 to 12 carbon atoms, R_2 is an alkyl group having 1 to 24 carbon atoms, and m and n represent polymerization degrees of thousands to hundred thousands].

7. A ballpoint-pen ink composition according to Claim 1 wherein said shear-viscocity reducing agent is selected from non-crosslinked acrylic copolymers of acrylic acid or methacrylic acid with acrylates represented by Formula (3) or methacrylates reprensented by Formula (4):

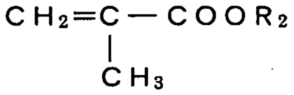
(Formula 3)



$$CH_2{=}\underset{\displaystyle H}{\underset{|}{C}}-COOR_1$$

[wherein R_1 is an alkyl group having 1 to 12 carbon atoms]

(Formula 4)



$$CH_2{=}\underset{\displaystyle CH_3}{\underset{|}{C}}-COOR_2$$

[wherein R_2 is an alkyl group having 1 to 12 carbon atoms].

ABSTRACT OF THE DISCLOSURE

An ink composition useful in an oil-based ballpoint pen capable of drawing a satisfactory line on the surfaces of various materials to be written which are not only papers but also non-permeable materials such as glasses and plastics as well as fibrous materials such as fabrics is provided. Such a ink composition comprises a colorant, an organic solvent having a vapor pressure of 5.0 to 50 mmHg (20°C) as a main solvent, such as n-propyl alcohol, isopropyl alcohol and propylene glycol monomethyl ether and a shear-viscosity reducing agent.

OIPE JC08
OCT 14 2004
PATENT & TRADEMARK OFFICE

Attorney's Docket No. IID-0211

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of
HATTORI et al.

Application No.: NEW APPLICATION   Examiner: To be assigned

Filed: Concurrently herewith   Group Art Unit: To be assigned

For: Ballpoint-Pen Ink Compositions

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ボールペン用油性インキ組成物	Ballpoint-pen ink compositions
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Prior Foreign Application(s)
外国での先行出願

Priority Not Claimed
優先権主張なし

2002-24005	Japan	January 31, 2002	☒
(Number) （番号）	(Country) （国名）	(Day/Month/Year Filed) （出願日／月／年）	
			☐
(Number) （番号）	(Country) （国名）	(Day/Month/Year Filed) （出願日／月／年）	

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(Application No.) （出願番号）	(Filing Date) （出願日）	(Application No.) （出願番号）	(Filling Date) （出願日）

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(Application No.) （出願番号）	(Filing Date) （出願日）	(Status: Patented, Pending, Abandoned) （現況：特許許可、係属中、放棄）
(Application No.) （出願番号）	(Filing Date) （出願日）	(Status: Patented, Pending, Abandoned) （現況：特許許可、係属中、放棄）

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直通電話連絡先：（氏名及び電話番号）

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第二共同発明者がいる場合、その氏名 浅田　勝久	Full name of second joint inventor, if any Katsuhisa ASADA
第二共同発明者の署名　浅田 勝久　日付　2003年10月2日	Second inventor's signature　Date October 2, 2003
住所 郵便の宛先と同じ	Residence Same as the Post Office Address
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郵便の宛先 日本国愛知県名古屋市昭和区緑町３丁目	Post Office Address c/o The Pilot Ink Co., Ltd.
１７番地　パイロットインキ株式会社内	3-17, Midorimachi, Showa-ku, Nagoya-shi, Aichi, Japan
（第三以下の共同発明者についても同様に記載し、署名をすること）	(Supply similar information and signature for third and subsequent joint inventors.)

第三共同発明者名		Full name of third joint inventor, if any	
第三共同発明者の署名	日付	Third inventor's signature	Date
住所		Residence	
国籍		Citizenship	
私書箱		Post Office Address	
第四共同発明者名		Full name of fourth joint inventor, if any	
第四共同発明者の署名	日付	Fourth inventor's signature	Date
住所		Residence	
国籍		Citizenship	
私書箱		Post Office Address	
第五共同発明者名		Full name of fifth joint inventor, if any	
第五共同発明者の署名	日付	Fifth inventor's signature	Date
住所		Residence	
国籍		Citizenship	
私書箱		Post Office Address	
第六共同発明者名		Full name of sixth joint inventor, if any	
第六共同発明者の署名	日付	Sixth inventor's signature	Date
住所		Residence	
国籍		Citizenship	
私書箱		Post Office Address	

第七共同発明者名		Full name of seventh joint inventor, if any	
第七共同発明者の署名	日付	Seventh inventor's signature	Date
住所		Residence	
国籍		Citizenship	
私書箱		Post Office Address	
第八共同発明者名		Full name of eighth joint inventor, if any	
第八共同発明者の署名	日付	Eighth inventor's signature	Date
住所		Residence	
国籍		Citizenship	
私書箱		Post Office Address	
第九共同発明者名		Full name of ninth joint inventor, if any	
第九共同発明者の署名	日付	Ninth inventor's signature	Date
住所		Residence	
国籍		Citizenship	
私書箱		Post Office Address	
第十共同発明者名		Full name of tenth joint inventor, if any	
第十共同発明者の署名	日付	Tenth inventor's signature	Date
住所		Residence	
国籍		Citizenship	
私書箱		Post Office Address	

OCT 14 2004
PATENT & TRADEMARK OFFICE

Form PTO-1595
(Rev. 03/ 01)
OMB No. 0651-0027 (exp. 5/31/2002)

RECORDATION FORM COVER SHEET
PATENTS ONLY

U.S. DEPARTMENT OF COMMERCE
U.S. Patent and Trademark Office

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof

1. Name of conveying party(ies):
Tetsuya Hattori (10/02/2003) and Katsuhisa Asada (10/02/2003)

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

2. Name and address of receiving party(ies)
Name: THE PILOT INK CO., LTD.
Internal Address:
Street Address:
3-17, Midorimachi
Showa-ku, Nagoya-shi
Pref.: Aichi
Country: Japan Zip:
Additional name(s) & address(es) attached: ☐ Yes ☒ No

3. Nature of Conveyance:
☒ Assignment ☐ Merger
☐ Security Agreement ☐ Change of Name
☐ Other
Execution Date: see Box 1, conveying parties

4. Application number(s) or patent number(s):
If this document is being filed together with a new application, the execution date of the new application is: October 2, 2003
A. Patent Application No.(s):
NEW APPLICATION
B. Patent No.(s):
Additional numbers attached? ☐ Yes ☒ No

5. Name and address of party to whom correspondence concerning document should be mailed:
Name: David T. Nikaido
RADER, FISHMAN & GRAUER PLLC
Internal Address: Atty. Dkt.: IID-0211
Street Address:
1233 20th Street, N.W.
Suite 501
City: Washington State: DC Zip: 20036

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 3.41) $ 40.00
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☒ Authorized to be charged to deposit account
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8. Deposit account number:
18-0013
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9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Lee Cheng, Reg. No. 40,949 — Name of Person Signing
Signature
October 8, 2003 — Date

Total number of pages including cover sheet, attachments, and documents: 2

RADER, FISHMAN & GRAUER, PLLC

Docket No. ____________________

U.S. ASSIGNMENT

IN CONSIDERATION of the sum of One Dollar ($1.00), and of other good and valuable consideration paid to the undersigned inventor(s) (hereinafter ASSIGNOR) by

[Insert ASSIGNEE's Name(s) Address(es)]

THE PILOT INK CO., LTD.
3-17, Midorimachi, Showa-ku, Nagoya-shi, Aichi, Japan

(hereinafter ASSIGNEE), the receipt of which is hereby acknowledged, the undersigned ASSIGNOR hereby sells, assigns and transfers to ASSIGNEE the entire and exclusive right, title and interest to the invention entitled

[Title of Invention]

Ballpoint-pen ink compositions

[*If the assignment is being filed after the filing of the application, this section must be completed]

for which application for Letters Patent of the United States was executed on even date herewith unless otherwise indicated below:

*filed on ____________________, Serial No. ____________________

(Rader, Fishman & Grauer, PLLC is hereby authorized to insert the series code, serial number and/or filing date hereon, when known)

and all Letters Patent of the United States to be obtained therefor on said application or any continuation, division, renewal, substitute, reissue or reexamination thereof for the full term or terms for which the same may be granted.

The ASSIGNOR agrees to execute all papers necessary in connection with application and any continuing, divisional, reissue or reexamination applications thereof and also to execute separate assignments in connection with such applications as the ASSIGNEE may deem necessary or expedient.

The ASSIGNOR agrees to execute all papers necessary in connection with any interference, litigation, or other legal proceeding which may be declared concerning this application or any continuation, division, reissue or reexamination thereof or Letters Patent or reissue patent issued thereon and to cooperate with the ASSIGNEE in every way possible in obtaining and producing evidence and proceeding with such interference, litigation, or other legal proceeding.

IN WITNESS WHEREOF, the undersigned inventor(s) has (have) affixed his/her/their signature(s).

[Signature(s) of Assignor(s)]

Tetsuya Hattori	Tetsuya HATTORI	october 2, 2003
(SIGNATURE)	(TYPE NAME)	(DATE)
Katsuhisa Asada	Katsuhisa ASADA	October 2, 2003
(SIGNATURE)	(TYPE NAME)	(DATE)
(SIGNATURE)	(TYPE NAME)	(DATE)
(SIGNATURE)	(TYPE NAME)	(DATE)
(SIGNATURE)	(TYPE NAME)	(DATE)

OCT 14 2004

Attorney's Docket No. IID-0211

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

HATTORI et al.

Application No.: New Application

Group Art Unit: To be assigned.

Filed: Concurrently herewith

Examiner: To be assigned.

For: BALLPOINT-PEN INK COMPOSITIONS

INFORMATION DISCLOSURE STATEMENT

Mail Stop Patent Application
Commissioner for Patents
P.O. BOX 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith on Form PTO-1449 is a listing of documents known to Applicant in order to comply with Applicant's duty of disclosure pursuant to 37 CFR 1.56.

☒ A copy of each listed document is being submitted to comply with the provisions of 37 CFR 1.97 and 1.98.

☐ As provided in 37 CFR §1.98(d), copies of the documents are not being provided since they were previously cited by or submitted to the Patent Office in parent application Serial No. ___________, filed ___________ of 37 CFR 1.97 and 1.98.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicant does not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a *prima facie* prior art reference against the claims of the present application.

Concise Explanation of Relevancy of the Document

☒ Any document having neither English translation nor English abstract relates to the subject matter of the above-identified application. English translation of the document is not readily available; however, the absence of such translations does not relieve the PTO from its duty to consider the submitted document (37 C.F.R. §1.98 and MPEP §609).

☒ 1. This Information Disclosure Statement is being filed within three months of the U.S. filing date or within three months from the date of entry of the national stage as set forth in 37 C.F.R. §1.491 in compliance with 37 C.F.R. §1.97(b), OR is being filed concurrent with filing of the Continued Prosecution Application (CPA) or the Request for Continued Examination (RCE). No fee is required (37 C.F.R. §1.97(b)).

☒ 2. Please charge any fee deficiency or credit any overpayment to Deposit Account No. 18-0013 as needed to ensure consideration of the disclosed information.

Respectfully submitted,

Date: October 8, 2003

David T. Nikaido
Registration No. 22,663

Lee Cheng
Registration No. 40,949

Rader, Fishman & Grauer PLLC
1233 20th Street, N.W., Suite 501
Washington, D.C. 20036
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Substitute for form 1449A/B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet	1	of	1

Complete if Known	
Application Number	NEW APPLICATION
Filing Date	October 7, 2003
First Named Inventor	Tetsuya Hattori
Art Unit	N/A
Examiner Name	Not Yet Assigned
Attorney Docket Number	IID-0211

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
	BA	JP-63-309571-A1	12-16-1988	ZEBURA K.K.		

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]

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[1] Applicant's unique citation designation number (optional). [2] Applicant is to place a check mark here if English language Translation is attached.

Examiner Signature		Date Considered	